

Amendments to the Drawings:

The attached replacement sheets include changes to Figures 3 and 4A. These sheets, which include Figures 3, 6, 4A and 4B, replace the original sheets including Figures 3, 6, 4A and 4B. Figures 3 and 4B show moveable flaps 47 (previously omitted element), has been added.

Attachments: Replacement Sheets with Figs. 3 and 4A

Annotated Sheets Showing Changes to Figs. 3 and 4A

Remarks

Favorable reconsideration of this application, as presently amended and in light of the following remarks, is respectfully requested.

Claims 1 – 20 are pending and Claims 1, 4, and 20 are amended.

Support for changes to the claims is found at least in Figs. 2 and 3 and the corresponding written description, and paragraph [0007] of the written description. Support for the changes to the drawing and specification is found in original Claims 4 – 7. Changes to the abstract address minor informalities. Thus, no new matter is added.

The outstanding Official Action objected to the drawings; objected to the abstract; and rejected Claims 1 – 20 under 35 U.S.C. § 112, second paragraph.

Applicants acknowledge with appreciation the courtesy of an interview conducted between Applicants' representative and the Examiner on April 27, 2009. During the interview, Applicants' representatives presented proposed claim amendments. Upon reviewing the proposed claim amendments, the Examiner suggested replacing the term "zero-lift surface" with "foil surface." Applicants' representatives further discussed the objection to the drawings. Applicants' representatives explained that the drawings could be amended without introducing new subject matter based on the subject matter recited in original Claims 4 – 7. The Examiner looked favorably to these arguments, but indicated that further consideration would be required.

Objection to the Drawings

Replacement figures are provided for Figs. 3 and 4A. Applicants submit that replacement Figs. 3 and 4A correspond to features recited in original Claims 4 – 7. Claim 20

is amended to recite that “the lower portion of each limb of the two limbs is offset relative to the upper part towards a rear part of the hull.” Applicants submit that Figs. 7A and 8A correspond to features recited in Claim 20 as amended.

Accordingly, Applicants respectfully request that the objection to the drawings be withdrawn.

Objection to the Abstract

The abstract is amended as suggested in the Outstanding Official Action of December 18, 2008.¹ Applicants respectfully request that the objection to the abstract be withdrawn.

Rejection of Claims under 35 U.S.C. § 112, Second Paragraph

The outstanding Official Action rejected Claims 1 – 20 under 35 U.S.C. § 112, second paragraph. Claim 1 is amended to recite a “foil surface.” Applicants submit that Claim 1 as amended, and claims depending therefrom, are definite. Applicants respectfully request that the rejection of Claim 1, and claims depending therefrom, be withdrawn.

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Claim 1 is directed to a vessel for traveling on water. Claim 1 includes, *inter alia*, a hull and a keel. Claim 1 is amended to recite that the keel is “configured to generate when submerged in water a closed loop of hydrodynamic force all directed away from the enclosed flow path, wherein incident flow passing through the enclosed flow path is decelerated relative to the hull.” The keel of amended Claim 1 is configured to generate a closed loop of

¹ See Official Action of December 18, 2008 at page 3.

hydrodynamic force all directed away from the enclosed flow path. As in the case of an aeroplane wing where an upward hydrodynamic force (i.e., lift) is generated when air is accelerated over the upper surface of the wing and decelerated along the underside of the wing, the creation of a closed loop of hydrodynamic force all directed away from the enclosed flow path will accelerate fluid passing around the outer surfaces of the keel and decelerate fluid through the keel.

In contrast to amended Claim 1, publication WO 95/18036 to *Peters* describes a loop keel arrangement including a pair of limbs 1 and 2 each including a series of slots 6 configured to draw water into a nozzle region 4 enclosed by the limbs 1 and 2 of the keel.² The loop keel of *Peters* is configured to create an accelerated flow, relative to the hull, within the nozzle region 4.³ This accelerated flow occurs via the *Venturi* effect where the slots 6 acts to constrict the space that the water flows through, which accelerates the flow of the water. Accordingly, this accelerated flow will produce a low pressure in the nozzle region 4.⁴

Peters fails to disclose or suggest a keel “configured to generate when submerged in water a closed loop of hydrodynamic force all directed away from the enclosed flow path, wherein incident flow passing through the enclosed flow path is decelerated relative to the hull.” Particularly, as described above, the flow through the keel of *Peters* is ***accelerated*** with respect to the hull of *Peters* instead of being ***decelerated***. Accordingly, the loop keel of *Peters* operates in the opposite way to the keel as claimed in Applicants’ Claim 1.

² See *Peters* Figures 1 and 2

³ See *Peters* col. 1, ln 36 – 42 and Figure 2.

⁴ See *Peters* col. 1, ln 49 – 57.

Further, *Peter* does not properly disclose or suggest “a closed loop of hydrodynamic force all directed away from the enclosed flow path.” Applicants respectfully submit that the forces 9 and 10 on limbs 1 and 2, respectively, illustrated in Figure 4 of *Peters* does not accurately reflect the actual direction of the forces. Particularly, based on the angle of limbs 1 and 2 when the boat of *Peters* is about to heel, Applicants are unable to identify any mechanism by which the *Venturi* effect in the nozzle region 4 of *Peters* could generate forces directed away from the boat as indicated by arrows 9 and 10. That is, since the *Venturi* effect in nozzle region 4 will unavoidably generated reduced pressure in the nozzle region 4, the higher pressure regions outside of the keel of *Peters* would cause each of the forces 9 and 10 to act in a direction opposite to the direction illustrated in Figure 4 of *Peters*.

Accordingly, Applicants submit that *Peters* fails to disclose or suggest all the features of Claim 1 as amended.

Conclusion

Consequently, in view of the present response and amendments, no further issues are believed to be outstanding in the present application, and the present application is believed to be in a condition for formal allowance. A Notice of Allowance is earnestly solicited.

Request for a Telephone Interview

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-607-3500.

Respectfully submitted,

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